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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/813,172

03/31/2004

Oswald Kuwert

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06/08/2006

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EXAMINER

JONES, JUDSON

ART UNIT

PAPER NUMBER

2834

DATE MAILED: 06/08/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/813,172

Applicant(s)

KUWERT ET AL.

Examiner

Judson H. Jones

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _____ MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 February 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6, 8-10 and 12-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6, 8-10 and 12-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Applicant's arguments with respect to claims 1-14 have been considered but are moot in view of the new ground(s) of rejection.

Claim Objections

Claim 12 is objected to because of the following informalities: there is no antecedent basis for the stopper recited in this claim. The stopper appears in claim 2, but claim 12 depends from claim 1, not from claim 2. Appropriate correction is required.

Claim Rejections - 35 USC § 103

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 1-6, 12 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Doi et al. 6,144,120 in view of Bosman et al. 5,254,892. Doi et al. discloses an electric motor for a linear drive system with a threaded shank 13, a molded part having linear guide element 12 as described in column 5 lines 60-62 and as shown in figure 1B. See also roller bearing 9 in figure 1A and see column 5 lines 48-59 for the internal screw thread on the rotor. Doi et al. does not describe either dc or ac power for the motor. However, according to Bosman et al. column 1 lines 17-19, "Typically the rotating magnetic field is effected by applying electrical pulses of continually changing phase to respective windings of the stator." Since Bosman et al. and Doi et al. are from the same field of endeavor and since Doi et al. does not disclose any type of power supply for his motor, it would have been obvious at the time the invention was made for one of ordinary skill in the art to have utilized phase windings as taught by Bosman et al. for a stepper motor such as the one described by Doi et al. Doi et al. discloses his housing as being molded but

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does not specify injection molded. Compression molding is another possible means of making resin housings. See Bosman et al. column 4 lines 4-8 for a teaching of using the injection molding method of making the housing.

In regard to claim 2, see Doi et al. column 5 lines 62-64 and column 9 lines 37-40. Doi et al. describes boss 5 as being formed as a resin material but does not specify injection molding. Bosman et al. teaches injection molding for forming a motor housing.

In regard to claim 3, see elements 6 in Doi et al. figure 1A.

In regard to claim 4, see Doi et al. column 5 lines 48-59.

In regard to claim 5, see Doi et al. column 5 lines 60-62.

In regard to claim 6, see Bosman et al. column 4 lines 41-44.

In regard to claim 12, the stopper interacts with the linear guide in the sense that both control the positioning of the shank.

In regard to claim 13, see Doi et al. figure 1A where a screw is shown connecting housing part 1 and boss 5 by means of a flange.

Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Doi et al. in view of Bosman et al. and Madsen et al. 4,672,247. Doi et al. as modified by Bosman et al. discloses the stepping electric motor for a linear drive system but does not disclose the stepping motor being a hybrid stepping motor. Madsen et al. teaches in column 1 lines 24-28 that a hybrid stepping motor provides a high torque with a minimum of electrical power input. Since Madsen et al. and Doi et al. as modified by Bosman et al. are from the same field of endeavor it would have been obvious at the time the invention was made for one of ordinary skill in the art to have

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utilized a hybrid stepping motor in a linear drive system in order to provide high torque with a minimum of electrical power.

Claims 8, 9 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Akagi in view of Bosman et al. Akagi discloses an electric motor for a linear drive system with a rotor hub coupled via a thread to a threaded shank as described in column 3 lines 45-48 wherein the rotor has two pole plates 18 separated by a permanent magnet 21 but does not disclose any method of making the rotor hub. Bosman et al. teaches in column 4 lines 45-53 making the rotor hub by injection molding. Since Bosman et al. and Akagi are from the same field of endeavor it would have been obvious at the time the invention was made for one of ordinary skill in the art to have utilized injection molding to make the rotor hub in order to reduce the cost of making the motor.

In regard to claim 9, see Bosman et al. column 4 lines 41-44.

In regard to claim 14, see magnet 21 in Akagi figure 1. According to Madsen et al. 4,672,247 column 1 lines 26-28 "the motors known as hybrid stepping motors incorporate a permanent magnet to provide a field of fixed flux."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Judson H. Jones whose telephone number is 571-272-2025. The examiner can normally be reached on 8-4:30 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Darren Schuberg can be reached on 571-272-2044. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Judson H. Jones 5/25/2006



KARL TAMAI
PRIMARY EXAMINER